Received Date : 16-Mar-2016

Revised Date : 31-May-2016

Accepted Date : 08-Jun-2016

Article type : Original Article

Motivational interviewing-based training enhances clinicians' skills and knowledge in psoriasis: findings from the Pso Well® study

Running Head: Psoriasis and Wellbeing: The Pso Well® clinician training evaluation

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Funding source: This article presents independent research funded by the National Institute for Health Research (NIHR) under its Programme Grants for Applied Research scheme (RP-PG-0608- 10163). The views expressed are those of the authors and not necessarily those of the National Health Service, the NIHR or the Department of Health.

Conflicts of Interest: None

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1111/bjd.14837

Acknowledgements: We are grateful to Laura Howells for her input to data analysis, the patients actors involved in collection of evaluation data, and all clinicians who took part in this study.

What is already known about this topic?

- Holistic care of people with psoriasis requires knowledge about and management of co-morbidities and associated risk factors.
- Motivational interviewing can support people with long-term conditions to make necessary changes to health-related behaviours.

What does this study add?

- The first evaluation of motivational interviewing skills training for clinicians managing psoriasis patients.
- Psoriasis-tailored motivational interviewing training assists clinicians to manage psoriasis holistically and support behaviour change.
- The Pso Well® training is acceptable to clinicians and feasible to run within UK healthcare settings

ABSTRACT

Background

Psoriasis is a common long-term, immune-mediated skin condition associated with behavioural factors (e.g. smoking, excess alcohol, obesity) which increase the risk of psoriasis onset, flares, and comorbidities. Motivational interviewing (MI) is an evidence-based approach to health-related behaviour change that has been used successfully with patients with long-term conditions. This study assessed change in clinicians' MI skills and psoriasis knowledge following Psoriasis and Well-being (Pso Well®) training.

Objectives

(1) To investigate whether the Pso Well® training intervention improves clinicians' MI skills and knowledge about psoriasis-related comorbidities and risk factors.

(2) To explore the acceptability and feasibility of the Pso Well® training content, delivery and evaluation.

Methods

Clinicians attended the 1-day training programme focused on MI skills development in the context of psoriasis. MI skills were assessed pre- and post-training using the Behaviour Change Counselling Index. Knowledge about psoriasis-related comorbidity and risk factors was assessed with a novel 22-point measure developed for the study. Interviews with clinicians were analysed qualitatively to identify perceptions about feasibility and acceptability of the training.

Results

Sixty-one clinicians completed the training (35 dermatology nurses; 23 dermatologists; 3 primary care clinicians). Clinicians' MI skills ($p<.001$) and knowledge ($p< .001$) increased significantly post-training. Clinicians found the training valuable and relevant to psoriasis management.

Conclusions

Attendance at the Pso Well® training resulted in improvements in clinicians' knowledge and skills to manage psoriasis holistically. Clinicians deemed the training itself and the assessment procedures used both feasible and acceptable. Future research should investigate how this training may influence patient outcomes.

BACKGROUND

Psoriasis is a complex immune-mediated skin condition affecting approximately 2% of the UK population[1]. Associations between psoriasis and other physical and psychological comorbidities are well established including cardiovascular disease (CVD), metabolic disease, and diabetes[2,3]; psoriatic arthritis (PsA)[4]; Crohn's disease[5]; anxiety, depression and suicidality[6]. Behavioural factors that increase individuals' risk of developing or exacerbating psoriasis and its comorbidities include smoking[7-9], obesity[8-12], physical inactivity[13,14], excess alcohol consumption[15-18], and poor medication adherence[19-21]. Psychological distress related to living with psoriasis may also limit an individual's quality of life and capacity for effective self-management[17, 21-25].

Holistic psoriasis management therefore requires understanding of the relationships between psoriasis, distress, and behavioural factors[26] as well as the skills to help patients achieve behavioural changes. Behavioural change is notoriously difficult[27] and our earlier studies demonstrated that clinicians working with people with psoriasis miss opportunities to address behaviour change topics within clinical consultations[28,29]. Clinicians also report lacking confidence and skills to address

lifestyle behaviour change in psoriasis consultations[28-30]; and view psoriasis as a simple skin condition rather than a complex long-term condition requiring integrated management of behavioural factors[26,30,31]. We therefore developed 1-day training for clinicians to manage psoriasis and support patient behaviour change within standard dermatology consultations.

The UK's Medical Research Council (MRC) guidelines advocate an iterative approach to the development of complex interventions in which design and evaluation inform one another, moving from exploratory studies to more definitive evaluation phases[32]. Resulting interventions are more likely to be effective and implementable within a target care setting due to the process of evidence-based evaluation/revision. Trials of such interventions are also less likely to fail due to problems of acceptability, intervention delivery or insensitivity to local context[32]. As an initial step in this process, we assessed whether clinicians acquire new psoriasis management skills following attendance at this training programme.

Motivational Interviewing (MI) is an evidence-based approach that strengthens motivation to change health-behaviours by eliciting people's beliefs about change, collaboratively developing goals, and increasing confidence to achieve change[33,34]. MI techniques typically foster people's motivations for change by asking them to identify personal reasons, ability, or desires to change; reducing opposition to change by acknowledging barriers and facilitators to making this change; and by reflecting personal strengths and previous examples of engaging in behaviour change. MI has successfully supported individuals to change behaviours across health contexts including in substance addiction, and long-term conditions (LCTs), including psoriasis[33,35-39]. No study has evaluated the effectiveness of MI training tailored to clinicians working with people with psoriasis, or conducted process evaluations to explore factors potentially influencing training efficacy and uptake (e.g. via clinicians' perspectives on training relevance and utility).

The Psoriasis and Wellbeing (Pso Well®) training programme provided clinicians with skills to support behaviour change with psoriasis patients. It also aimed to increase clinicians' knowledge about the relationships between psoriasis and risk factors for psoriasis-related comorbidities or worse psoriasis outcomes, given previous research indicating limited knowledge in this area[26]. This exploratory study investigated the following question: Can the Pso Well® training provide clinicians with the skills to address behavioural risk factors in psoriasis, and increase knowledge about the relationships between psoriasis and its comorbidities? We hypothesised that following training clinicians would acquire MI *skills* to support behaviour change with patients and *knowledge* about psoriasis-related comorbidities and risk factors.

METHODS

Design

This before and after, exploratory investigation of a 1-day training programme was conducted in small groups of clinicians from a range of practice settings. An embedded qualitative study was used to explore clinicians' experiences and perceptions of the training. Institutional research ethics approval was obtained (ref: 14223).

Participant recruitment

UK primary and secondary care clinicians involved in psoriasis management were invited to participate in the study via email/letter/phone. Recruitment sources included: British Association of Dermatologists, Scottish and Welsh Dermatological Societies, Primary Care Dermatology Society, local primary care Clinical Commissioning Groups, nurse specialist groups (British Dermatological Nursing Group, National Dermatology Specialist Nurses meeting; established dermatology departments across Wales, England and Scotland), and local research events.

Measures

Clinicians' motivational interviewing skills

The Behaviour Change Counselling Index (BECCI) is a valid and reliable 11-item skills checklist that assesses core MI competencies[40]. Clinicians participated in two, 10-minute audio-taped consultations with trained and experienced patient actors, immediately before and immediately after the Pso Well® training. Four patient actors (2 male; 2 female), were used to standardise the assessment delivery. Scripts provided to patient actors were developed by members of the research team to form anonymous, composite patient cases, with content based on both clinical experience and patient research. Scripts were standardised for length and depth of content, as well as the number and type of cues about behavioural risk factors (e.g. obesity, alcohol, low mood) that patients would provide during assessments.

Completed audio-recordings were reviewed by an independent panel of seven trained BECCI raters from psychology, health economics, health care and health services research. Raters were trained by AC/CB (experienced MI trainers) during three standardisation meetings to calibrate approaches to scoring and then blinded to pre- and post-training audio tapes. The team was assessed for inter-rater reliability by comparing two audio-recordings each against a 'gold standard' scorer (MI trainer).

Intraclass correlation coefficients (ICCs) indicated 'almost perfect' agreement[41] on Mean BECCI score (ICC = .93, 95% confidence interval [CI] = .75 - .98, p<.001) and Total BECCI score (ICC = .93, 95% CI = .77-.98, p<.001). The primary outcome was change in clinicians' BECCI score. A change of 0.8 between the before and after score was considered adequate to measure responsiveness on this measure[40], although the study was initially powered to detect a change of 0.4. To have 80% power to detect this change as statistically significant at the 5% level required a minimum sample size of 41 clinicians.

Clinicians working with an MI approach are expected to talk less than patients (i.e. <50% of total consultations time), therefore, BECCI raters also estimated the percentage of time that clinicians talked during consultations compared to patients. Coders' estimates of 'talk time' were compared with objectively calculated 'talk time' throughout training to optimise consistency with actual clinician 'talk time'. This measure is recommended as a supplementary indicator of an MI-consistent consultation approach[40].

Patient actors participating in consultations with clinicians provided written feedback on their evaluation of clinicians' skills pre- and post-training using a five-point Likert scale (with 5 items) plus open text responses which were categorised with content analysis. Likert scale items addressed the degree to which patient actors felt i) listened to in the consultation; ii) the clinician understood how they were feeling; iii) confident to make behavioural changes following the consultation; iv) that the clinician provided constructive information; and v) they talked more than the clinician about ways to improve their health.

Knowledge of psoriasis-related comorbidities and risk factors

A 22-item survey assessing current knowledge about psoriasis-related comorbidities and risk factors was devised for this study by experts in psoriasis and its comorbidities, and checked for accuracy and ease or difficulty of comprehension with the wider research team. The survey assessed knowledge about (a) psoriasis-related comorbidities; (b) prevalence of behavioural (smoking, alcohol, obesity, physical inactivity) and mood (anxiety, depression, stress) factors in psoriasis; (c) associations between psoriasis and behavioural and mood factors. Maximum scores were 9 points, 19 points and 7 points (respectively); the total maximum score was 35.

To assess the degree to which clinicians applied their knowledge of psoriasis-related risk factors in consultations with patient-actors in a simulated practice setting, the audio-recorded consultations were coded for two additional items. First, researchers scored the clinicians from 0 (not at all) to 4 (a great extent) on the question: *Did the clinician make links between psoriasis and behaviour change topics?* Second, raters were asked to note the 'behaviour change topics' arising during 10-minute consultations to capture the range and type of topics clinicians chose to discuss with patients before and after training.

Analysis

Descriptive analyses were conducted on participant demographics and the frequency and range of topics discussed during audio-recorded consultations. Primary outcome measures (BECCI skills and knowledge survey) were analysed using within group comparisons (paired-samples t-tests and Wilcoxon signed-rank tests) in order to assess change over time. Small amounts of missing data (fewer than three items on any measure) were managed using imputation of the mean value of the other items on that scale or sub-scale. Larger amounts of missing data were managed by adopting a pairwise exclusion approach.

Patient actors' Likert scale responses were analysed with content analysis[42] to identify categories in open-ended written responses. These categories were developed inductively from the data (i.e. using emergent rather than pre-determined ideas) and a researcher (LH) not involved in data collection independently second coded these data. Categories identified by the two coders were subsequently compared and ambiguities resolved via discussion.

Intervention content and procedure

The following description of the training intervention is consistent with the 'Template for Intervention Description and replication (TIDier) guidelines[43]. The Pso Well® training programme was designed in line with current recommendations for psoriasis management[43] and behaviour change methods[33,45]. Content was supplemented by additional recommendations from research team members involved in reviewing more up-to-date research evidence on psoriasis[1,3,26,28-31,46,47]. This 1-day intensive training programme aimed to enable clinicians to adopt a patient-centred consultation approach and applied MI skills. Skills taught to clinicians addressed the core MI *processes* – Engaging, Focusing, Evoking, and Planning. The MI literature provides further detail on these principles[48], and its evidence base[33,35-39,49].

The 1-day face-to-face training session was delivered in private university/hospital training rooms and delivered by CB and AC for consistency; both are psychologists trained in MI and experienced in delivering MI-based workshops to a range of clinicians. During training, research was presented demonstrating the links between psoriasis and modifiable behavioural factors (i.e. smoking, alcohol, obesity, physical activity, low mood, and medication adherence). MI skill-building activities were presented using a consistent structure, namely: (a) learning about new skills; (b) watching skills demonstration; (c) individual skills practice; and (d) feedback or coaching on skills use. (Video link provides further training details: http://www.impactpsoriasis.org.uk/practitioners/).

Embedded qualitative study

A purposive sample of trainees, with a broad range of characteristics (e.g. profession, sex, training session attended) were invited to complete a semi-structured interview to explore their experiences and perceptions of the Pso Well® training. Invitations to interview were made face-to-face immediately following training and researchers (AC/CP) followed up to arrange interviews with those expressing interest. Interview topics focused on clinicians' experiences and views of the training content, delivery, and assessment methods. Interviews were digitally audio-recorded, transcribed verbatim, and analysed using an inductive thematic analysis[50]. Supplementary File 1 provides further detail on the methodological approach undertaken.

RESULTS

Recruitment

Sixty-one clinicians attended training; it was not possible to identify exact numbers of clinicians invited to participate in the study due to third parties forwarding on invitations to whole organisation/membership lists. Of the 61 participants, six did not complete pre- and/or post-training audio-taped consultations. Three clinicians were unwilling to complete patient actor consultations due to low confidence in their anticipated performance, one clinician was absent post-training and two technical faults occurred. This resulted in five audio recordings being omitted from the analysis; these were instead used for training of the BECCI rater team. In total 110 audio-recordings were included in the BECCI analysis. Training courses ran across the UK with between five and 15 clinicians; of the 61 attendees, 53 were female (86.9%). Purposive sampling based on a range of characteristics (Table 1) resulted in 18 clinicians completing a post-training qualitative interview (17 by telephone; one face-to-face).

Clinicians' motivational interviewing skills

A paired-samples t-test was conducted on the BECCI data to evaluate the impact of the Pso Well® training on clinicians' (n=55) motivational interviewing skills. There was a statistically significant increase in BECCI scores from pre-training (*M* = .50, *SD* = .47) to post-training (*M* = 1.26, *SD* = .71), *t*(54) = 8.37, *p* < .001 (two-tailed). The mean increase in BECCI scores was .76 with a 95% confidence interval ranging from .57 to .94. The eta squared statistic of .56 indicated a large effect size regarding observed improvement in MI skills[51].

Figure 1 illustrates the mean BECCI scores before and after training. Figure 2 shows BECCI scores broken down by domain pre- and post-training. Percentages are calculated here because potential maximum total scores on each domain varied between 4 and 20 points.

Table 2 displays descriptive data illustrating pre- and post-training BECCI scores organised by clinician group.

Figure 3 illustrates mean clinician 'talk time' estimated by raters before and after attending the training. A paired-samples t-test was used to compare the proportion of the consultation time in which the clinicians spoke during patient-actor consultations before and after the Pso Well® training (n=55). There was a statistically significant decrease in talk time from pre-training (*M* = 58.36%, *SD* = 15.93) to post-training (*M* = 47.18%, *SD* = 11.46), *t*(54) = 6.22, *p* < .001. The mean decrease in clinician talk time was 11.18% with a 95% confidence interval ranging from 7.58 to 14.79. The eta squared statistic (.42) indicated a large effect size[51].

Scores from the scale completed by patient actors indicated greater improvement in clinicians' consultation approaches post training (Figure 4). The content analysis of actors' open text responses identified differences in consultation approach before and after training. These differences are outlined in Table 3.

Clinicians' knowledge of psoriasis-related comorbidities and risk factors

A paired-samples t-test was conducted on the survey data to assess the change in levels of clinicians' knowledge following the Pso Well® training. Statistically significant increases were found for participants' knowledge of ***risk factor prevalence*** (*t*(60) = 4.30, *p* < .001; pre-training *M* = 5.82,

SD=1.21, post-training *M* = 6.47, *SD*=.93), as well as the ***mechanisms*** linking psoriasis and risk factors ($t(60) = 7.12$, $p < .001$; pre-training *M* = 11.52, SD=3.70, post-training *M* = 14.21, SD=3.66) but not regarding knowledge of psoriasis-related ***comorbidities*** ($p = .096$) (Figure 5).

Table 4 displays descriptive data illustrating pre- and post-training knowledge scores categorised by clinician group (primary care clinician/dermatologist/specialist nurse).

Figures 6 and 7 show the *number* and *type* of change topics discussed during audio-taped consultations, before and after training. A Wilcoxon signed-ranks test showed no significant difference ($z = 1.32$, $p = .19$) in the extent to which clinicians linked psoriasis and these change topics during consultations, pre and post training. This was measured using a single-item – '*Did the clinician make links between psoriasis and behaviour change topics?*'

Thematic analysis of qualitative interviews

Five overarching themes accounted for clinicians' experiences and views of the Pso Well® training: 'Delivery of the training'; 'Utility of the training content'; 'Skills acquisition and scope for implementation'; 'Interest in and ability to attend'; and 'Trade-offs when undergoing assessment'. Overall clinicians reported that the training enabled acquisition of novel consultation skills that were relevant and useful in the management of psoriasis. They highlighted the contrast between standard care and the more patient-centred/holistic approach used within the training. Clinicians also noted that for this approach to be fully embedded within their practice, they would require further coaching/feedback on their use of MI skills in practice. The full thematic structure alongside anonymised illustrative quotes from clinicians is illustrated in Supplementary File 2.

DISCUSSION

As understanding increases about how behavioural/psychological factors relate to psoriasis, so do calls for effective interventions targeting these factors[52]. The current findings show that the 1-day Pso Well® training programme enhanced clinicians' ability to use MI skills to address behaviour change in the context of managing psoriasis. The degree of change in MI skills found in this study is equivalent to that demonstrated by other MI training[53,54]. Our previous work has shown that clinicians' understanding about the relationships between psoriasis and related behavioural/psychological factors is limited and even when clinicians recognise psoriasis as a

complex condition, this understanding may not translate into clinical management approaches[26]. The Pso Well® training therefore aimed to integrate clinicians' understanding and clinical management approach by providing them with evidence-based behaviour change strategies to use during standard psoriasis consultations. As well as demonstrating increased understanding of the links between psoriasis and lifestyle and mood factors, findings also showed that following training, clinicians discussed a broader range of these topics within consultations and focused conversations less on medications management alone. Patient actor feedback also illustrates (from a 'proxy' patient perspective) high levels of overall satisfaction with the consultation style used by clinicians following training that is consistent with core components of MI[48]: partnership (*e.g. collaborative care*); compassion (*e.g. empathy, acknowledgement of people's thoughts/feelings*); and evocation *(e.g. eliciting patient-led solutions and management plans)*.

It was notable that following training clinicians' knowledge of psoriasis-related comorbidities did not increase, nor were they more likely to explain to patients *how* psoriasis and behavioural factors are associated. This may have been because the training focused less on the relationships between psoriasis-associated conditions and behaviours per se, and more on how to address behaviour change with patients. Addressing behavioural factors as part of psoriasis management is important because modification of lifestyle factors, medication adherence and low mood can improve psoriasis outcomes and reduce the likelihood of developing or exacerbating psoriasis-related comorbidities[55]. Given that clinicians often don't opportunistically or systematically discuss these issues with patients[26,28,30-31], training such as Pso Well® is needed to support clinicians with this task. Despite not indicating an increase clinicians' knowledge about psoriasis comorbidities, the Pso Well® training can change clinicians' approaches to psoriasis management discussions in line with current recommendations[44]. Moreover, this shift in approach can be carried out within the context of a 10-minute consultation about psoriasis. Measuring the effects of this training intervention on patient outcomes within a controlled trial is now warranted.

Consistent with the MRC guidance for complex intervention design[32] this study also allowed us to explore the extent to which clinicians endorsed the training as relevant, useful, and usable within clinical practice. Qualitative findings indicate that the Pso Well® training is both feasible to conduct and evaluate within existing health care settings, and that clinicians are satisfied with the training content, delivery, and assessment methods chosen.

Although the clinicians within this study were self-selected and thus potentially more skilled or predisposed to this approach[56], baseline scores indicated little or no experience of using MI skills. This suggests that even those who were enthusiastic about or familiar with MI techniques,

benefitted from training. As the sample included mostly secondary care clinicians, the results cannot be generalised to the management of psoriasis by primary care professionals. Further work is necessary to explore the impact of this training on clinical management approaches to psoriasis conducted within general practice settings. Finally, recruitment to the training highlighted that secondary care clinicians are more likely to attend than GPs (with or without a special interest in dermatology). Barriers to engaging with, or attending this training should therefore be explored with this professional group.

This study shows that the Pso Well® training programme can enhance standard clinical management of psoriasis to include an MI-consistent approach to addressing a range of psoriasis-related behavioural risk factors. Furthermore, it is likely that clinicians will engage with this training and find it useful for practice. The findings warrant further investigation of how this holistic approach to care could affect psoriasis outcomes within current clinical settings.

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Table 1. Recruitment to the Pso Well® training programme and data collected from clinicians

Clinical specialism	**Attended Pso Well® training programme**	**Completed skills measure**	**Completed knowledge measure**	**Completed qualitative interview**
Dermatologist	23	22	23	9
Dermatology specialist nurse	35	31	34	8
General Practitioner	2	1	2	1
Health care assistant	1	1	1	0
Total	**61**	**55**	**60**	**18**

** Of the 23 dermatologists who attended the training, nine were dermatology specialist registrars*

Table 2. Mean BECCI scores grouped by participants' health care discipline

Clinician group	Mean BECCI score Pre (SD)	Mean BECCI score post (SD)	Mean change
Dermatologist (consultant/registrar) N = 22	.37 (.20)	1.35 (.76)	.98
Primary care clinician (GP, Health care assistant, primary care nurse) N = 6	.51 (.39)	1.35 (.66)	.84
Nurse specialist (secondary care) N = 27	.60 (.61)	1.16 (.69)	.56

Table 3. Content analysis of patient actor feedback (n=55)

Code label		**Illustrative quote(s) [clinician ID number]**
Before training		
Consultation approach	Good rapport with patients	*Good, open, friendly, empathetic. (ID18) Very kind and gentle consultation. (ID29)*
	Non-judgemental approach	*She did not criticise my 'heaviness' which I thought made it easy to open up. (ID2)* *Lovely approach, non-judgemental. (ID37)*
	Optimistic messages	*The nurse practitioner was very positive and offered me lots of hope to control the psoriasis. (ID2)*
Consultation focus	Focused upon clinicians' agenda rather than patients'	*Did not really ask about psycho-social situation until she picked up on cue at end. More the clinician's agenda. (ID19)* *Very 'practical', almost mechanical. Felt like there was a checklist being filled in. (ID4)*
	Patient agenda/concerns unaddressed	*I felt the doctor listened and helpful but I would of liked to get into more of the things I'm struggling with. (ID30)* *I came away feeling like I didn't get a lot out and off my chest, there was much more I would have said if I was asked. (ID46)*
	Narrow focus on disease/treatment	*Clinician's agenda was primarily to treat psoriasis condition. (ID14)* *Concentrated on treatments available rather than lifestyle change. Cues about weight not picked up. (ID31)*
	Uncomfortable discussing lifestyle factors	*Only comfortable discussing all treatment options rather than addressing cues about lifestyle. (ID39)* *Listened to a few accounts of lifestyle then back to comfort zone of describing treatments. (ID37)*
Approach to management	Lack of management	*Seemed unsure whether to commit to a course of action and if so which action it should be. (ID51)*

Code label		Illustrative quote(s) [clinician ID number]
planning	planning	*Did not offer particular help. Commented only on my drinking habits. Time limitation prevented any constructive discussion. (ID21)*
	Directive suggestion/ advice giving rather than patient-led	*Used phrases like "you need to do this"; "you must…" TOLD Sylvia to stop drinking. (ID24)* *I felt this clinician had a set view to tell me what could be offered and the risks which were off-putting…information giving only. (ID52)*
	Advice giving rather than patient-focused	*I felt the doctor gave me lots of advice and stories of other people in my situation but I would have liked to talk a more about my problems and find more ways of dealing with it. (ID33)*
After training		
Consultation approach	Noticeable improvement	*Lot better, asked really good questions, engaged fully, felt she cared about me and the future (ID17)* *Huge improvement! (ID14)*
	Positive affect/satisfaction	*Had a lovely meeting with my doctor, felt I was given some really good ideas to help and was really listened to. Walked out of my consultation with a smile on my face. (ID30)*
	Collaborative approach	*Great, thought she spoke to me not at me. Felt I was part of my future. (ID20)* *Asked: "What is the most important thing you want to address?" "We can take small steps" "Make the plan together". (ID28)*
	Effective communication skills (empathy, open questions, reflections, engaged non-verbal communication)	*Very different - the clinician shook hands and I felt more valued this time. Also showed empathy and understanding of my situation. (ID52)* *Lot more empathy, good listening skills, reacted to information, great open body language. (ID51)*
Consultation focus	Patients' agenda and concerns elicited	*All of my main worries and niggling problems were all brought to the surface. (ID41)* *Was very patient-centred 'what is my priority'. (ID19)*
	Acknowledged patients' thoughts and feelings	*Was able to talk more about her mood etc this time. Trainee much more empathic. (ID45)* *More acknowledgement of Sylvia's thoughts/feelings. (ID37)*
	More focus on behaviour change	*Much more focus on lifestyle changes available and offering choices and ideas for weight loss and eating plan. (ID10)*
	Linked psoriasis and lifestyle factors	*Did point out relationship between condition and BP/weight/cholesterol. (ID39)* *The doctor explained considerably more how my lifestyle might affect general health, including flare-ups. (ID8)*
Approach to management planning	More focused on developing a plan from the discussion	*I got some good goals set out today to be thinking about for the next week what has put a smile on my face. I really liked how the doctor got my main worries from me and then formulated a plan for the future. (ID42)* *Felt she cared about me and the future. Started an action plan that could work for Joe. (ID17)*
	Management discussion not	*Could of gone a little further with the planning being more constructive. (ID42)*

Code label		Illustrative quote(s) [clinician ID number]
	always led to change plans	
	Patient-led solution finding	*Keen to help me to see ways I could help myself. (ID54)* *Cues re weight discussed extensively "what could you do about it", "what exercise would be suitable". (ID31)*

Table 4. Mean knowledge measure scores grouped by participants' health care discipline

Clinician group	Mean Knowledge score Pre (SD)	Mean Knowledge score post (SD)	Mean change
Nurse specialist (secondary care) N = 31	20.51 (4.26)	24.00 (4.48)	3.48
Dermatologist (consultant/registrar) N = 23	21.76 (5.25)	24.67 (4.77)	2.91
Primary care clinician (GP, Health care assistant, primary care nurse) N = 7	22.71 (2.67)	25.29 (4.23)	2.57

GP = general Practitioner

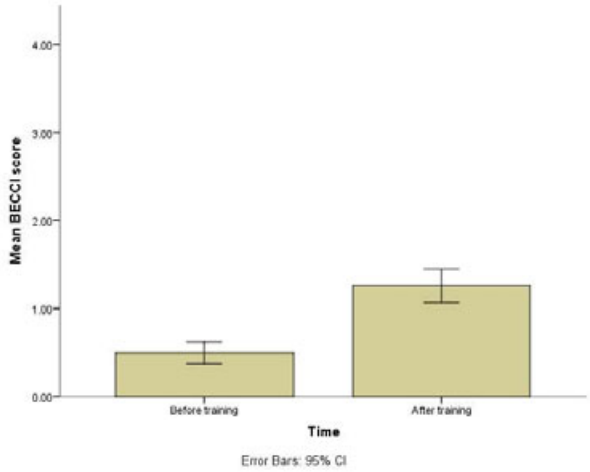
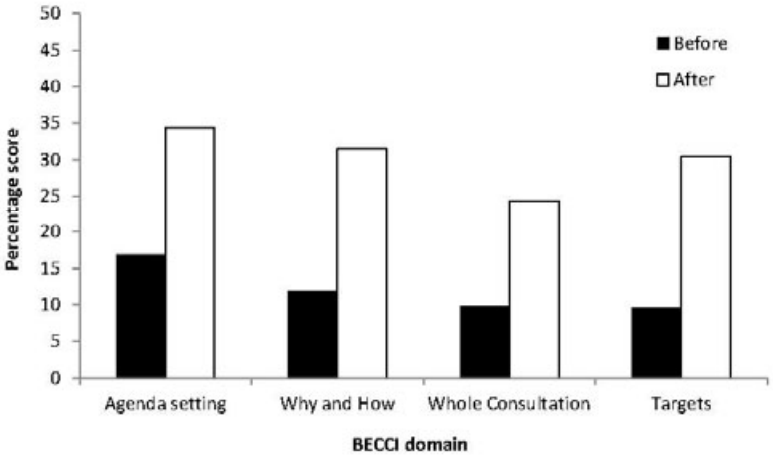


Figure 1. Mean BECCI score before and after attending Pso Well training (n=55)



Notes. Four BECCI domains include: 1. Agenda setting and permission seeking, 2.The why and how of behaviour change, 3.The whole consultation, 4. Talk about targets. Maximum score for each domain = 100%.

Figure 2. Mean BECCI domain scores before and after attending Pso Well training (n=55)

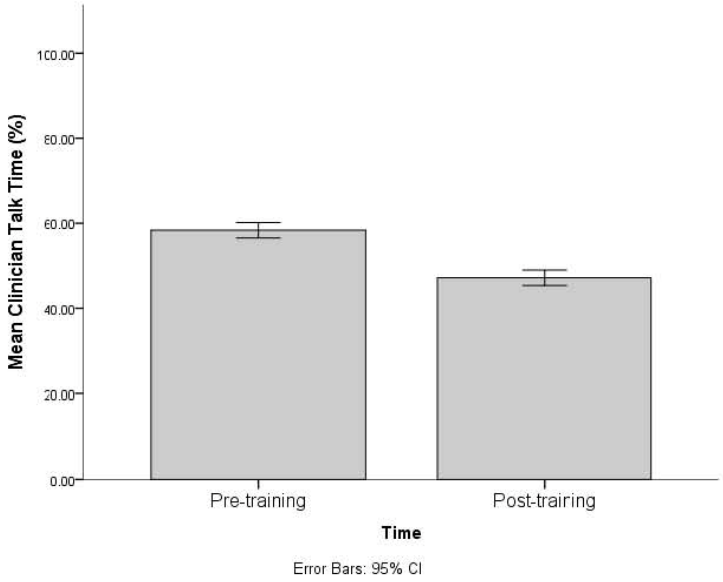
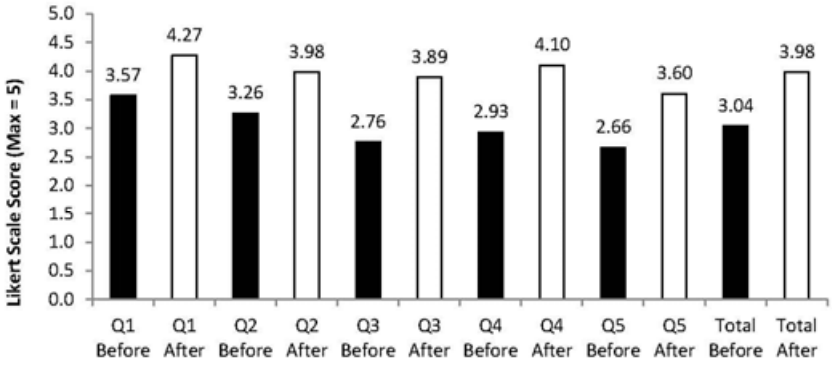


Figure 3. Mean estimated clinician talk time (% of total consultation) before and after attending Pso Well training (n=55)



Key: Patient Actor Feedback Items (Questions 1 – 5)
Q1: As the patient I felt listened to
Q2: As the patient I felt the clinician understood how I was feeling
Q3: As the patient I felt the clinician helped me to feel confident I could change my lifestyle
Q4: As the patient I felt that the clinician used information I was providing to have a constructive discussion about changing a behaviour or managing my health
Q5: As the patient I felt I was talking more than the clinician about what I could do to better manage my health

All items answered on a 5-point Likert scale. (1=not at all; 5=to a great extent)

Figure 4. Patient actor assessment of clinicians' consultation approach pre- and post-training (n=46)

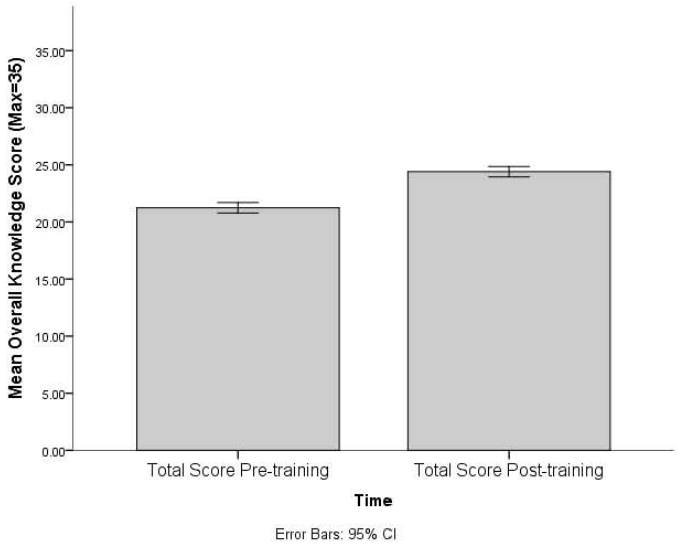


Figure 5. Mean clinician knowledge scores before and after attending Pso Well training (n=60)

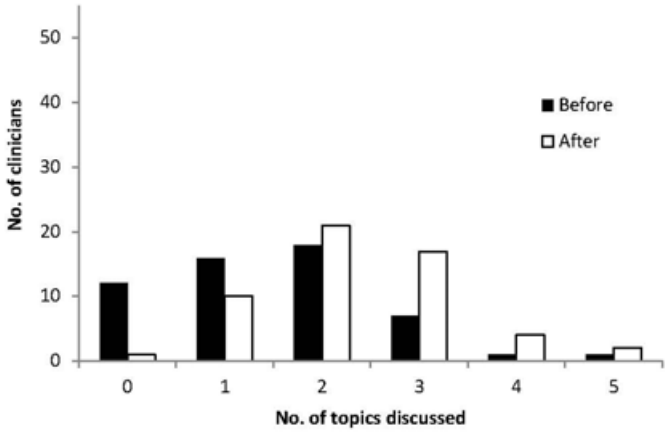


Figure 6. Number of topics discussed during clinician-patient actor consultations before and after attending training (n=55)

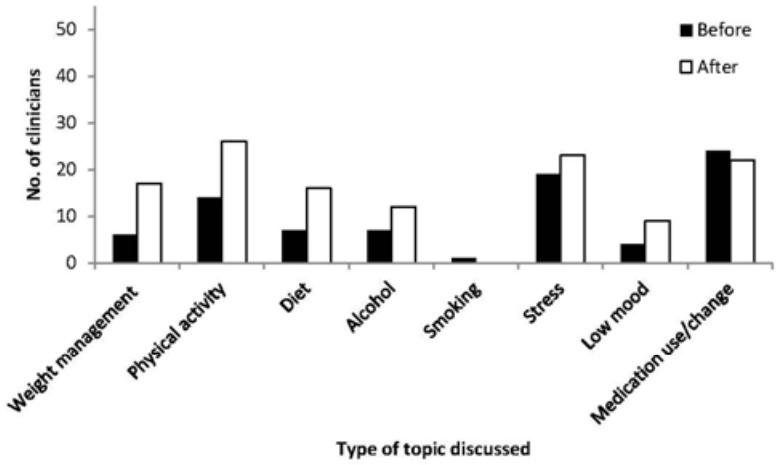


Figure 7. Type of topics discussed during clinician-patient actor consultations before and after attending training (n=55)